

PENDING CLAIMS AS AMENDED

Please amend the claims as follows:

1. (Currently amended) A transmitter for transmitting a signal to a subscriber station through at least two transmit antennas, the transmitter comprising:

means for transmitting a ~~distinguishable~~ first pilot signal through ~~each of the at least two~~ a first transmit ~~antennas~~ antenna;

means for transmitting a second pilot signal through a second transmit antenna;

means for receiving channel estimate information corresponding to said ~~per antenna~~ first and second pilot signals;

means for generating ~~and combining pre-correction~~ delays and weights based on said channel estimate information, the delays corresponding to a plurality of signal paths to the subscriber station, the weights corresponding to the first and second antennas and to the plurality of signal paths;

means for applying said delays and weights to data to produce delayed, weighted data;
and

means for summing the delayed, weighted data for the first and second antennas to transmit to the subscriber station, the delays causing the data transmitted on the plurality of signal paths to arrive at the subscriber station at substantially the same time, the weights causing the antennas to form a plurality of beam patterns with primary lobes along the plurality of signal paths such that a primary lobe of one beam pattern is placed nearly within a null between two lobes of another beam pattern; and

~~means for transmitting a data signal through the at least two transmit antennas based on said pre-correction delays and weights.~~

2. (Currently amended) A method for transmitting a signal to a subscriber station through at least two transmit antennas, the method comprising:

transmitting a ~~distinguishable~~ first pilot signal through ~~each of the at least two~~ a first transmit ~~antennas~~ antenna;

transmitting a second pilot signal through a second transmit antenna;
receiving channel estimate information corresponding to said ~~per antenna~~ first and second
pilot signals;
generating ~~and combining pre-correction~~ delays and weights based on said channel
estimate information, the delays corresponding to a plurality of signal paths to the subscriber
station, the weights corresponding to the first and second antennas and to the plurality of signal
paths;
applying said delays and weights to data to produce delayed, weighted data;
summing the delayed, weighted data for the first and second antennas to transmit to the
subscriber station, the delays causing the data transmitted on the plurality of signal paths to arrive
at the subscriber station at substantially the same time, the weights causing the antennas to form a
plurality of beam patterns with primary lobes along the plurality of signal paths such that a
primary lobe of one beam pattern is placed nearly within a null between two lobes of another
beam pattern; and
transmitting [[a]] the summed, delayed and weighted data signal through the ~~at least two~~
first and second transmit antennas ~~based on said pre-correction delays and weights.~~

3. (Currently amended) A computer readable media embodying a method for transmitting a signal to a subscriber station through at least two transmit antennas, the method comprising:

transmitting a ~~distinguishable~~ first pilot signal through ~~each of the at least two~~ a first
transmit ~~antennas~~ antenna;
transmitting a second pilot signal through a second transmit antenna;
receiving channel estimate information corresponding to said ~~per antenna~~ first and second
pilot signals;
generating ~~and combining pre-correction~~ delays and weights based on said channel
estimate information, the delays corresponding to a plurality of signal paths to the subscriber
station, the weights corresponding to the first and second antennas and to the plurality of signal
paths;
applying said delays and weights to data to produce delayed, weighted data;

summing the delayed, weighted data for the first and second antennas to transmit to the subscriber station, the delays causing the data transmitted on the plurality of signal paths to arrive at the subscriber station at substantially the same time, the weights causing the antennas to form a plurality of beam patterns with primary lobes along the plurality of signal paths such that a primary lobe of one beam pattern is placed nearly within a null between two lobes of another beam pattern; and

transmitting ~~[[a]]~~ the summed, delayed and weighted data signal through the ~~at least two first and second~~ transmit antennas ~~based on said pre-correction delays and weights.~~

4. (Currently amended) A base station apparatus comprising:

at least ~~two~~ first and second transmit antennas;

a first mixer corresponding to ~~each of said at least two~~ a first transmit ~~antennas~~ antenna, for applying a ~~per-antenna~~ first cover code to a pilot signal to be transmitted through ~~each of said at least two~~ the first transmit ~~antennas~~ antenna;

a second mixer corresponding to a second transmit antenna, for applying a second cover code to the pilot signal to be transmitted through the second transmit antenna;

receiver for receiving channel estimate information corresponding to said ~~per-antenna~~ first and second pilot signals for at least two transmit paths per transmit antenna;

a pre-correction processor for generating pre-correction delays and weights based on said channel estimate information, the delays corresponding to a plurality of signal paths to the subscriber station, the weights corresponding to the first and second antennas and to the plurality of signal paths;

means for applying said delays and weights to data to produce delayed, weighted data;

a summer for combining said ~~pre-correction delays and weights~~ delayed, weighted data for the first and second antennas to transmit to the subscriber station, the delays causing the data transmitted on the plurality of signal paths to arrive at the subscriber station at substantially the same time, the weights causing the antennas to form a plurality of beam patterns with primary lobes along the plurality of signal paths such that a primary lobe of one beam pattern is placed nearly within a null between two lobes of another beam pattern; and

a transmitter ~~corresponding to each of said at least two transmit antennas~~, for transmitting ~~[[a]]~~ the summed, delayed, weighted data signal through said ~~at least two~~ transmit antennas; ~~wherein the data signal transmitted through each of said at least two transmit antennas is adjusted based on said pre-correction delays and weights.~~

5. (Currently amended) A receiver for receiving a data signal transmitted from at least two transmit antennas and through at least two transmit paths, the receiver comprising:

~~means for generating and combining pre-correction delays and weights;~~

means for determining a plurality of paths of pilot signals transmitted by the at least two transmit antennas;

~~means for measuring channel information corresponding to each combination of one of the at least two transmit antennas and one of the at least two plurality of transmit paths wherein the data signal transmitted through each of said at least two transmit antennas is adjusted based on said pre-correction delays and weights; [[and]]~~

~~means for transmitting said channel information;~~

means for receiving data signals transmitted from the at least two transmit antennas through the plurality of paths; and

means for demodulating the received data signals from the plurality of paths as substantially a single signal received through a single path.

6. (Currently amended) A method for receiving a data signal transmitted from at least two transmit antennas and through at least two transmit paths, the method comprising:

~~means for generating and combining pre-correction delays and weights;~~

determining a plurality of paths of pilot signals transmitted by the at least two transmit antennas;

~~measuring channel information corresponding to each combination of one of the at least two transmit antennas and one of the at least two transmit plurality of paths wherein the data signal transmitted through each of said at least two transmit antennas is adjusted based on said pre-correction delays and weights; [[and]]~~

~~transmitting said channel information;~~

receiving data signals transmitted from the at least two transmit antennas through the plurality of paths; and

demodulating the received data signals from the plurality of paths as substantially a single signal received through a single path.

7. (Currently amended) A computer readable media embodying a method for receiving a data signal transmitted from at least two transmit antennas and through at least two transmit paths, the method comprising:

~~means for generating and combining pre-correction delays and weights;~~

determining a plurality of paths of pilot signals transmitted by the at least two transmit antennas;

measuring channel information corresponding to each combination of one of the at least two transmit antennas and one of the at least two transmit plurality of paths ~~wherein the data signal transmitted through each of said at least two transmit antennas is adjusted based on said pre-correction delays and weights; [[and]]~~

transmitting said channel information;

receiving data signals transmitted from the at least two transmit antennas through the plurality of paths; and

demodulating the received data signals from the plurality of paths as substantially a single signal received through a single path.

8. (Currently amended) A remote station apparatus for receiving signals transmitted from at least two transmit antennas and through at least two transmit paths, the apparatus comprising:

~~a summer for combining pre-correction delays and weights;~~

means for determining a plurality of paths of pilot signals transmitted by the at least two transmit antennas;

at least four channel estimators, wherein each channel estimator measures channel information corresponding to a signal received through a different combination of one of the at least two transmit antennas and one of the at least two transmit paths wherein the signal

transmitted through each of said at least two transmit antennas is adjusted based on said pre-correction delays and weights; [[and]]

channel estimate processor for generating channel estimate information based on said measured channel information;

means for transmitting said channel information;

means for receiving data signals transmitted from the at least two transmit antennas through the plurality of paths; and

means for demodulating the received data signals from the plurality of paths as substantially a single signal received through a single path.